

USSN 10/615,746

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicant (s): James Lynn Haas

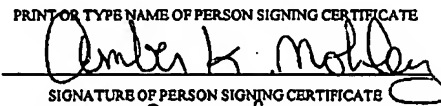
Serial No.: 10/615,746

Group Art Unit: 1733

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Examiner: Samchuan Cua Yao

For: USE OF A LOW BINDER FIBER MAT WITH SUPPORT MAT FOR  
FABRICATING A FIBER REINFORCED POLYMERIC FOAM COMPOSITE

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Washington, D.C. 20231

Sir:

BRIEF FOR APPELLANTThis is an appeal from the final rejection of Claims 1-16 and 20 mailed 13  
October 2005.REAL PARTY IN INTEREST

The Real Party in Interest in this Appeal is Dow Global Technologies Inc.

RELATED APPEALS AND INTERFERENCES

At this time there are no related appeals or interferences.

STATUS OF CLAIMSClaims 1-16 and 20 are pending and stand rejected under a final rejection.  
Claims 17-19 were previously cancelled. Appellant appeals the rejection of Claims 1-  
16 and 20.

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Appellant assumes the sole basis for final rejection is based on 35 U.S.C. 103(a) and that the Examiner's silence in regards to the prior 35 U.S.C. 112 rejection is an indication that Appellant has overcome that rejection with their previous response (dated 18 August 2005). A telephone message from the Examiner further confirmed that the 112 rejection is no longer pending.

#### STATUS OF AMENDMENTS

Appellant filed no amendments after the pending final rejection.

#### SUMMARY OF INVENTION

The present invention recites in Claim 1 a process for fabricating a fiber reinforced polymeric foam composite (generally defined on page 1, lines 12-26). The process requires introducing a foamable mixture (procedure generally described on page 7, line 19 through page 8, line 2; foamable mixture generally defined on page 8, lines 3-15) into a low binder fiber mat (page 2, lines 5-6 and page 3, lines 20 through page 4, line 2) and then expanding the foamable mixture into a polymeric foam between top and bottom facing sheets (page 6, lines 3-10) such that the low binder fiber mat disperses (page 7, lines 21-22) within the polymeric foam. The process is characterized by introducing the low binder fiber mat as part of a composite web (page 4, line 7 through page 5, line 22) in combination with a support mat (page 5, line 23 through page 6, line 2). The process is further characterized by supplying the composite web from a single roll (page 5, lines 13-22; Example 1 at page 11, lines 12-14; and Example 2).

Claim 2 further characterizes the process by characterizing the extent to which the low binder fiber mat expands during the process by requiring it to become "substantially distributed "within the polymeric foam (defined and characterized on page 10, lines 9-17).

Claim 12 further characterizes a particular embodiment of the process of Claim 1 by implementing two composite webs with disposition of a foamable mixture on the low binder fiber mat of a first composite web and orienting a second composite web with its support mat adjacent to the foamable mixture and such that the second composite web is between the top facing sheet and low binder fiber mat of the first composite web. In such an orientation, the order of components from the bottom up is a support mat and low binder fiber mat of the first composite web, a foamable

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composition, the support mat and low binder fiber mat of the second composite web and a top facing sheet. The process of Claim 12 is described on page 9, lines 9-14

Claim 13 further characterizes another particular embodiment of the process of Claim 1 by requiring a bottom facing sheet (facing sheets are generally defined on page 6, lines 3-10) adjacent and below the support mat of a first composite web with disposition of a foamable composition onto the low binder fiber mat of the first composite web and a top facing sheet above the low binder fiber mat of the first composite web. The process of Claim 13 is described on page 9, lines 15-20.

Claim 14 further characterizes yet another embodiment of the process of Claim 1 by specifying disposition of components in the following order from bottom to top: a bottom facing sheet, a first expandable fiber mat (generally described on page 1, lines 21-25), a composite web oriented with the support mat adjacent to the first expandable fiber mat, a top facing sheet and a foamable mixture between at least one three locations: between the bottom facing sheet and first expandable mat, the first expandable fiber mat and the support mat of the composite web, and the composite web's low binder fiber mat and the top facing sheet. The process of Claim 14 is described in Claim 14 and page 9, line 21 through page 10, line 8.

Claim 15 characterizes an embodiment of the process of Claim 14 by requiring the first expandable fiber mat is part of a second composite web. The process of Claim 14 is described in with the description of Claim 14, cited above, and specifically called out on page 10, lines 6-7.

Claim 16 characterizes yet another embodiment of the process of Claim 14 by requiring the bottom facing sheet and the first expandable fiber mat to be part of a second composite web.

Claim 20 characterized yet another embodiment of the process of Claim 1 by specifying that the low binder fiber mat (of the first composite web) does not contact any rollers. This aspect of the invention is highlighted as a solution this invention provides to a problem associated with using low binder fiber mat (*see* page 4, lines 20-22).

#### ISSUES

The first issue is whether Claims 1-16 and 20 are patentable under 35 U.S.C. 103(a) over Londrigan (U.S. 5,837,743) in view of Hoffman (US 4,804,425).

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The second issue is whether Claims 1-16 and 20 are patentable under 35 U.S.C. 103(a) over Gluck (US 4,572,865) in view of Hoffman (US 4,804,425).

### GROUPING OF CLAIMS

Claims 1 and 3-11 stand or fall together. Claims 12, 13, 14, 15, 16 and 20 each stand or fall independently. Appellant believes Claims 12-16 and 20 are patentable for the same reasons as Claim 1 (from which each depend) as well as for requiring at least one additional limitation that Appellant believes is neither taught nor suggested in the cited references. Claims 15 and 16 depend from Claim 14 and so are also patentable over the cited art for the same reasons as Claim 14 as well as for their own additional independent structural requirements.

### ARGUMENT

**Issue 1: Whether Claims 1-16 and 20 are patentable under 35 U.S.C. 103(a) over Londrigan (U.S. 5,837,743) in view of Hoffman (US 4,804,425).**

The Office finds that Londrigan teaches all of the elements of Appellant's Claim 1 except that it teaches supplying a low binder fiber mat and a support mat from independent rolls. The Office looks to Hoffman and concludes as the keystone to their rejection that Hoffman's teaching of supplying a laminate of meshwork web and facing into a similar foaming process suggests to one of ordinary skill in the art that one could effectively combine a low binder fiber mat and a support mat into a single feed roll in the process of Londrigan. The Office dismisses the fact that Appellant solved critical problems with introducing low binder fiber mat into a foaming process as simply recognition of "another advantage which would flow naturally from following the suggestion of the prior art" (page 5 of the Office Action date 13 October 2005). As such, the Office concludes that solving such a problem cannot be a basis for patentability, citing *Ex parte Obiaya*, 227 USPQ 58,60 (B.P.A.I. 1985).

### Claims 1-16 and 20

Claims 2-16 and 20 all dependent from Claim 1 so the present arguments will be directed to Claim 1, but apply equally to all of Claims 1-16 and 20.

Appellant finds the keystone conclusion of the Office's rejection lacking support and, as such, that the Office has fallen short of establishing a *prima facie* case

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of obviousness for rejecting Appellant's Claim 1. Appellant further believes that *Ex parte Obiaya* is not applicable, nor the argument the Office pulls therefrom, in the present situation since the prior art never suggested Appellant's composite of a low binder fiber mat and a support mat.

A. Requirements for Prima Facie Obviousness

There are three basic criteria that the Office must meet to establish a *prima facie* case of obviousness: (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; (2) there must be reasonable expectation of success; and (3) the prior art reference (or references) must teach or suggest all the claim limitations. (see, MPEP §2142, third paragraph and supporting citations). Of primary issue in this case is the third criterion. Appellant believes that the Office has fallen short of establishing a case of *prima facie* obviousness for Claim 1 for at least two reasons, set forth in subsections B and C, below.

B. Hoffman does not suggest a combination of low binder fiber mat and support mat as a composite web on a single roll.

To support a case of obviousness, the Office must provide references that are "sufficient for one of ordinary skill in the relevant art having the references before him to make the proposed substitution, combination or other modification." (*In re Linter*, 173 USPQ 560, 562 (C.C.P.A. 1972)). The references that the Office cites must "appear to have suggested the claimed subject matter." (*In re Rinehart*, 189 USPQ 143, 147 (C.C.P.A. 1976)). A general statement in a reference that encompasses a specifically claimed invention does not suggest the invention if the teaching only provides "general guidance and is not at all specific as to the particular form of the claimed invention and how to achieve it. Such a suggestion may make an approach 'obvious to try' but it does not make the invention obvious." (*Ex parte Obukowicz*, 27 USPQ2d 1063, 1065 (B.P.A.I. 1992)).

The Office relies on a keystone conclusion that Hoffman suggests to one of ordinary skill in the art that one could effectively combine and interchangeably supply a low binder fiber mat and a support mat as a composite web in a single feeding roll. However, noticeably absent from Hoffman is any mention of an expandable fiber mat, let alone a low binder fiber mat, in combination with a support mat. Hoffman teaches

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that one can combine “meshwork webs” with a facer sheet to form a composite web for feeding into a foaming process (*see* column 3, lines 5ff), yet Hoffman does not teach using a low binder fiber mat as a “meshwork web.” In fact, the exemplary meshwork webs in Hoffman are not even expandable, rather consist of a metal wire screen (*see* element 10 in Fig. 3 and column 5, lines 26ff) and a plastic lattice that has its strands welded together (*see* element 17 in Figure 4 and column 5, lines 33ff).

Hoffman does provide general teaching that meshwork webs cover “webs of woven fabric, knit fabric, grids and woven and non-woven fiber fleeces in the widest sense.” (*see* column 1, lines 33-35 and column 2, lines 29-31). However, even within such a general list, one of ordinary skill in the art would recognize that woven and knit materials are too intertwined to be expandable and as such could not qualify as a “low binder fiber mat” as defined in the present Application (*see* page 2, lines 5-6 and page 3, lines 20 through page 4, line 2). That leaves non-woven fiber fleeces. However, only a subset of non-woven fiber fleeces are likely “expandable” according to the definition in the present Application (page 1, lines 24-25) and only a small group of that subset might qualify as low binder fiber mats. Therefore, even within the broad and general description of “meshwork web” in Hoffman only a specific and narrow subset of non-woven fiber fleece could possibly qualify as a low binder fiber mat – and even then only a specialized artisan who is familiar with low binder fiber mat technology would possibly read “non-woven fiber fleece” and think “low binder fiber mat.” Hoffman, at best, provides “general guidance that is not at all specific as to the particular form of the claimed invention and how to achieve it” and as such only suggests a narrow form of composite web consisting of a low binder fiber mat and a facing sheet could be obvious to try – and that is insufficient to make the invention obvious. (*Ex parte Obukowicz*).

Respectfully, Appellant believes that the only way to identify a suggestion of combining a low binder fiber mat with a facer material within the teaching of Hoffman is through improper use of hindsight from the present Application. Only through insight and motivation from the present Application would one read the meshwork web of Hoffman and reasonably see a low binder fiber mat. In contrast to the rational of *In re McLaughlin* (*see* MPEP §2145 X.A.), one must be of more than ordinary skill in the art (must be familiar with low binder fiber mats) at the time of the present Application to even find teaching that may be construed as suggestive of low binder fiber mat within the general teaching of Hoffman’s meshwork web.

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Therefore, contrary to the Office's keystone conclusion, Appellant respectfully contends that Hoffman does not suggest to one of ordinary skill in the art to effectively combine and interchangeably supply a low binder fiber mat and a support mat as a composite in a single feeding roll. Hoffman makes no mention of expandable fiber mats, let alone low binder fiber mats. Embedded within very broad and general teaching of meshwork webs is a classification that may include low binder fiber mats – but low binder fiber mats are but a very specialized subset of that classification. Even if an artisan were skilled enough to presume low binder fiber mats may fall within that classification, the breadth of the teaching merely provides a suggestion to try low binder fiber mats. Since Hoffman does not clearly suggest compositions webs of a low binder fiber mat and a support mat, at best suggesting to a highly skilled artisan that such a composition may be tried, Appellant respectfully believes that the Office's argument falls short of establishing *prima facie* obviousness.

C. The Office Failed to Consider Appellant's Claim 1 as a Whole

When considering a difference between prior art and a claimed invention, the Office must consider the claim as a whole. (*see*, MPEP §2141.02). In considering the claim as a whole the Office must consider whether Appellant has identified a problem's source and offered a solution different from solutions offered for a similar problem in prior art. Discovery of the source of a problem may render an invention patentable even though the remedy may be obvious once the source of the problem is identified. (*In re Spinnoble* as quoted in MPEP §2141.02, third sub-section). An invention that is a combination of old elements will not be obvious if the older elements solve different problems (*Lindermann Maschinefabrik GmbH v. American Hoist & Derrick Co.*, 321 USPQ 481, 488-89 (Fed. Cir. 1984)). However, an invention may not be patentable if the solution is obvious from prior art that contains the same solution for a similar problem (*in re Wiseman*, quoted in MPEP 2141.02, third sub-section). Additionally, a combination suggested in the prior art will not be patentable simply by recognizing another advantage that would flow naturally from following the suggestion of the prior art when the difference would otherwise be obvious (*Ex parte Obiaya*, 227 USPQ 58, 60 (B.P.A.I. 1985)).

Appellant has discovered a solution to specific problems with feeding low binder fiber mat into a foaming process. The problems include necking, pulling apart of low binder mats upon unrolling and fouling of rollers that contact low binder mats.

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On page 4, lines 16-22 of the present Application Appellant has identified the source of these problems as being: (i) stretching of low binder mats when unrolling and feeding into a foaming process; (ii) the fact that low binder mat contacts and adheres to itself in supply rolls thus causing it to pull apart upon unrolling; and (iii) the fact that low binder mat contacts rollers in typical processes whereupon the fibers may remain with the rollers and foul them. Appellant articulates these problems and the fact the present invention is a solution to those problems on page 4, lines 16-22 of the present Application.

The combination of the problems Appellant addresses is quite specific to the use of low binder fiber mat. As in Sponnoble, Appellant has discovered the source of these problems (stretching of the mat, contact with itself in roll form and contact with rollers in typical processes) and further discovered a solution to the problems – use of a composite web and avoiding contact of low binder fiber mat with rollers.

Unlike in Wiseman, none of the cited references even acknowledges these problems, let alone offers a similar solution. The process of Londrigan (and Gluck) should suffer from the very problems Appellant resolves since the references disclose a process that feeds a reinforcing mat from a separate roll than the facing sheet and further illustrates contacting the reinforcing mat with rollers. Hoffman also fails to identify the particular problem and solution of the present invention. Hoffman seeks to solve a problem with bubbles forming in foam-facer laminates (*see*, column 1, line 67 through column 2, line 2) and does so by using a “meshwork” web instead of a “reinforcing” web (*see*, column 2, lines 26-29). The problem of Hoffman is unrelated to the problem addressed by the present invention and the solution of Hoffman is unrelated to the solution of the present invention. Since: (1) none of the cited references appreciates the problem identified by Appellant; (2) none of the cited references identifies the source of the problems as does Appellant; and (3) none of the cited references provides a solution to those problems as does Appellant, Appellant believes the presently claimed invention as a whole is non-obvious over the cited references per MPEP 2141.02 and the case law cited therein.

Appellant has already established that in subsection B, *supra*, that none of the cited references suggest combining a low binder fiber mat with a support mat to form a composite web that is fed from a single roll in the foaming process. As such, Ex parte Obiaya is not applicable to the present situation. The solution Appellant discovers cannot merely be recognition of another advantage that would flow

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naturally from following the suggestion of the prior art when the difference would otherwise be obvious if there is no reference suggesting the specific combination of Appellant's invention in any of the prior art.

Finally, simply combining elements known from the cited references is insufficient to render Claim 1 obvious since the older elements are solving different problems than Appellant's invention (*see, Lindermann*).

#### D. Summary

There is insufficient support to conclude that Hoffman suggests to one of ordinary skill in the art that one could effectively and interchangeably supply a low binder fiber mat and a support mat as a composite in a single feeding roll. Furthermore, Appellant's invention solves a problem that none of the cited references acknowledges, let alone solves. Appellant's invention is not obvious from a solution to a similar problem in the cited references (none of them address problems with feeding low binder fiber mats). Furthermore, Appellant's invention is not merely another advantage which would flow naturally from following the suggestion of the prior art since the cited prior art does not suggest combining a low binder fiber mat with a support mat. Each of these shortcomings illustrate that the prior art falls short of teaching or suggesting all of the present claim limitations. Therefore, Appellant believes the Office has fallen short of establishing a *prima facie* case of obviousness for Claim 1 of the present Application.

#### Claim 2

Appellant believes Claim 2 is patentable for the following reason in addition to the reasons cited for Claim 1.

Claim 2 specifies that the low binder fiber mat of Claim 1 becomes "substantially distributed within the polymeric foam." The Application defines a foam having fibers "substantially distributed" therein as meaning any plane parallel to the foam's opposing primary surfaces intersects at least one fiber, preferably multiple fibers or a single fiber multiple times. Such a foam typically appears to an unaided eye to have a uniform distribution of fibers from an expandable fiber mat distributed from one major surface to an opposing major surface (*see* page 10, lines 9-17 of the present Application).

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In contrast, one of the objectives of the meshwork web of Hoffman is to "obtain a profile of decreasing density from facing to foam center." (*see*, column 1, lines 26-29. While this specific teaching is with respect to "reinforcing webs," the meshwork web is used in replacement of the reinforcing web (*see*, column 2, lines 28-29) presumably for the same purpose (*see*, column 1, line 67 through column 2, line 2 – objective is to improve present process by eliminating air bubbles)). The objective of obtaining a density gradient conflicts with a visually uniform distribution of fibers sought through the substantially distributed fibers of Claim 2. At the very least, Hoffman fails to suggest achieving a distribution of fibers such that any plane parallel to the foam's opposing primary surfaces intersects at least one fiber. Hence, the meshwork web of Hoffman cannot qualify as the low binder fiber mat of Claim 2 since they obtain different distributions. As such, Hoffman cannot suggest the use of the low binder fiber mat and support mat of the composite web in Claim 2. Neither of the other cited references suggests such a combination either. Therefore, Appellant respectfully believes the Office has fallen short of establishing a *prima facie* case of obviousness for Claim 2 and that the requirement of achieving substantial distribution of fibers from the low binder fiber mat in Claim 2 to further render Claim 2 patentable over the cited references.

### Claim 12

Claim 12 requires disposing two composite webs, one above the other, such that one composite web is between a top facing sheet and a low binder fiber mat of the other composite web. Such a structure is foreign to Hoffman, which teaches disposing a meshwork web on a facing sheet. The second composite web in Claim 12 does not comprise a facing sheet (the support mat is not a facing sheet by definition since it is interior to the structure). The teachings of Hoffman are not subject to modification to account for an interior composite web since Hoffman only discloses combinations of a meshwork web with a facing sheet. Therefore, Appellant respectfully contends that Hoffman alone or in combination with either of the other cited references fall short of establishing a *prima facie* case of obviousness for Claim 12 and that Claim 12 is patentable over the cited references.

### Claim 13

Claim 13 requires disposing a composite web, comprising a low binder fiber mat and a support mat, between top and bottom facing sheets. For similar reasons as

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cited regarding Claim 12, *supra*, such a procedure is foreign to any suggestion or teaching in Hoffman and actually conflicts with the teaching in Hoffman. Hoffman teaches disposing a meshwork web onto a facing sheet. Even if the meshwork web can be construed to be suggestive of a low binder fiber mat contrary to Appellant's belief, Hoffman does not suggest disposing a facing sheet with a meshwork web in between two other facing sheets. To do so conflicts with Hoffman's teaching to dispose a meshwork web directly onto a facing sheet (a facing sheet must serve as a facing – or it is not a “facing” sheet). Moreover, the composite web of Claim 13 is highly unlikely to qualify as a “meshwork web” under the Hoffman definition, cited *supra*, that is disposed onto a facing sheet. As such, Appellant respectfully contends that the process of present Claim 13 is outside the scope of any teaching in Hoffman. Furthermore, since the Office relies on Hoffman to establish the composite web of the present invention and Hoffman does not suggest a composite web that does not utilize a facing sheet, Appellant believes the Office has fallen short of establishing a *prima facie* case of obviousness for Claim 13 and that Claim 13 is patentable over the cited references.

#### Claim 14

Similar to Claim 13, Claim 14 specifies disposing a composite web between two facing sheets and as such is patentable over the cited references for the same reason as Claim 13.

Furthermore, Claim 14 requires disposing an expandable fiber web between a bottom facing sheet and a support mat of the composite web. This configuration is even more remote from any teaching in Hoffman. The Office relies on Hoffman to create the composite web of the present invention, but Hoffman only suggests disposing a meshwork web onto a facing sheet. By definition, a facing sheet cannot be disposed within a structure (it will not serve as a “facing”) and certainly Hoffman does not suggest having a facing sheet disposed between two other facing sheets and separated from those two other facing sheets by expanding fiber mats. Therefore, it is not even possible to combine the teaching of Hoffman and other art to create the process of Claim 14 since the very teaching of Hoffman conflicts with the structure required in Claim 14. In view of these conflicting structures, Appellant respectfully contends that the Office has fallen short of establishing a *prima facie* case of obviousness for Claim 14 and that Claim 14 is patentable over the cited references.

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**Claim 15**

Claim 15 depends from and is necessarily narrower in scope than Claim 14. Therefore, Appellant respectfully contends that Claim 15 is patentable over the cited art for the same reasons as Claim 14.

Claim 15 further requires disposing two composite webs aligned such that the support web of the first is between the low binder fiber mat of the first and the low binder fiber mat of the second. Under the teaching of Hoffman, that would again place a "facing sheet" in between two expandable fiber mats and such a teaching is in conflict with Hoffman's composites that include a "facing". In view of these conflicting structures, Appellant respectfully contends that the Office has fallen short of establishing a *prima facie* case of obviousness for Claim 15 and that Claim 15 is patentable over the cited references.

**Claim 16**

Claim 16 depends from and is necessarily narrower in scope than Claim 14. Therefore, Appellant respectfully contends that Claim 15 is patentable over the cited art for the same reasons as Claim 14.

Claim 16 is similar to Claim 15 but requires the bottom facing sheet to serve as the support mat for the composite web containing the first expandable fiber mat. Therefore, Appellant respectfully contends that the Office has fallen short of establishing a *prima facie* case of obviousness for Claim 16 and that Claim 16 is further patentable over the cited references for the same reasons as Claim 15.

**Claim 20**

Claim 20 depends from Claim 1 therefore Appellant believes Claim 20 is patentable over the cited references for the same reasons cited for Claim 1. Appellant further finds the additional limitation in Claim 20 that the low binder fiber mat does not contact any rollers renders Claim 20 patentable over the cited references. This additional aspect serves as a solution to a problem Appellant identified with fouling of rollers when feeding low binder fiber mat into a process when the low binder fiber mat contacted rollers (*see, e.g.*, page 2, lines 18-22 and page 4, lines 20-22 of the present Application).

The Office relies on Hoffman to create a suggestion to combine a low binder fiber mat with a support mat to create a composite web for feeding into the process of Londrigan (or Gluck) from a single roll. Assuming *arguendo* (and contrary to

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Appellant's belief) that Hoffman does suggest forming a composite with a low binder fiber mat and a facing, implementation of that composite into the process of either Londrigan (or Gluck) still requires contacting the low binder fiber mat with a roller – the figures of Londrigan (or Gluck) reveal rollers contacting both sides of each facing sheet (which, as Appellant understands, the modified process proposed by the Office would correspond to the composite web) as well as the inside of the fiber mats and there is no suggestion that any roller may be eliminated from the process. Hence, the process of Londrigan (and Gluck) as modified by Hoffman would still require contact between a low binder fiber mat and a roller – in conflict with Claim 20.

The Office appears to implicitly argue for modifying the Londrigan (and Gluck) process further by eliminating rollers that would contact the low binder fiber mat and points to the absence of such rollers in Hoffman as suggesting such rollers “clearly are not critical” and their removal naturally flows from the modified process of Londrigan (and Gluck) (Final Rejection, page 3 and page 5). Appellant respectfully disagrees.

Low binder fiber mat is much more difficult to feed than any other feedstock, particularly those of Hoffman, due partially to its low tensile strength (*see, e.g.*, page 2, lines 5-13 of the present Application). While the teachings of Londrigan (and Gluck) encompass use of low binder fiber mat (and, notably, each illustrate use of multiple rollers), the teaching of Hoffman does not. Therefore, teachings of Hoffman are not suitable for implying successful process modifications to Londrigan (or Gluck) when it comes to use of low binder fiber mat and elimination of feed rollers. Even if Hoffman suggests additional rollers are not necessary when implementing composite webs, Hoffman does not appear make such a suggestion in regards to composite webs of low binder fiber mat. At best, Hoffman would suggest a motivation to try eliminating rollers when feeding composite webs containing low binder fiber mat and as established *supra*, a motivation to try is insufficient to establish obviousness (*see, Ex parte Obukowicz*).

Since the Office requires a modification to the Londrigan (and Gluck) teachings based on Hoffman teachings that do not clearly suggest applicability with low binder fiber mats, Appellant believes the Office has fallen short of establishing a *prima facie* case of obviousness for Claim 20 and that Claim 20 is patentable over the cited references.

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**Issue 2: Whether Claims 1-16 and 20 are patentable under 35 U.S.C. 103(a) over Gluck (U.S. 4,572,865) in view of Hoffman (US 4,804,425).**

The Office presents nearly identical arguments in regards to Gluck and Hoffman as they present in regards to Londrigan and Hoffman, substituting Gluck for Londrigan. Appellant's arguments for Londrigan and Hoffman are equally applicable to Issue 2 in regards to Gluck and Hoffman. Hence, rather than recite the arguments again Appellant refers to the argument under Issue 1 and incorporates them here for Issue 2 with the substitution of reference to Gluck for any reference to Londrigan.

**CONCLUSION**

Appellant believes that the Office has fallen short of establishing a case of *prima facie* obviousness against Claims 1-16 and 20 of the present Application over Londrigan in view of Hoffman or over Gluck in view of Hoffman. Under both grounds for rejection the Office indicates Hoffman suggests combining a low binder fiber mat with a support mat to create Appellant's composite web. Appellant fails to find any teaching or suggestion in Hoffman to use a low binder fiber mat. In reading the Hoffman teaching most favorably for the Office, Appellant at best finds only a "suggestion to try" a low binder fiber mat – and that suggestion only to one of sufficiently specialized skill to interpret "non-woven fleece" as possibly including a low binder fiber mat.

Appellant also respectfully believes the Office has failed to consider each claim as a whole. Appellant has offered a specific solution to specific problems unique with feeding low binder fiber mat into a foaming process and none of the cited references address a similar problem or solution. Appellant respectfully believes that the solution is not merely another benefit flowing from a suggestion found in Hoffman to combine low binder fiber mat with a support mat since Appellant fails to find any such suggestion in Hoffman.

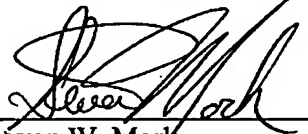
Appellant further believes the Office has fallen short of establishing a *prima facie* case of obviousness against each of Claims 2 and 12-16 based on specific limitations introduced in those Claims. Claim 2 requires a distribution of low binder fiber mat fibers within a foam that Hoffman does not suggest or even seem to allow. Claims 12-16 each specify a specific combination and configuration of facers and composite webs that conflict with Hoffman's teachings. Claim 20 requires modifying

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Londrigan and Gluck teaching with Hoffman teachings, but such a modification is not clearly applicable to low binder fiber mat feedstock.

For the reasons cited herein, Appellant believes Claims 1-16 and 20 of the present Application are patentable over the cited art and respectfully requests reversal of all rejection of those claims and issuance of a notice of allowance for the same Claims.

Respectfully submitted,



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## CLAIMS APPENDIX

### WHAT IS CLAIMED IS:

1. (Previously Amended) A process for fabricating a fiber reinforced polymeric foam composite comprising introducing a foamable mixture into a low binder fiber mat and then expanding the foamable mixture into a polymeric foam between top and bottom facing sheets such that the fibers of the low binder fiber mat become dispersed within the polymeric foam, wherein the low binder fiber mat is part of a first composite web that further comprises a support mat and wherein a roll of first composite web is used to supply the process with the first composite web.

2. (Original) The process of Claim 1, wherein the fibers of the low binder expandable fiber mat become substantially distributed within the polymeric foam.

3. (Original) The process of Claim 1, wherein the low binder expandable fiber mat comprises glass fibers.

4. (Original) The process of Claim 1, wherein the support mat is a facing sheet.

5. (Original) The process of Claim 1, wherein at least one of the facing sheets contains a fiber facing sheet that is not wet through by the foamable mixture.



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6. (Original) The process of Claim 1, wherein at least one of the facing sheets contains an aluminum sheet.

7. (Original) The process of Claim 1, wherein the foamable mixture produces a polyurethane or polyisocyanurate foam.

8. (Original) The process of Claim 1, wherein the reinforced polymeric foam composite has a thickness of greater than two inches (5.08 centimeters).

9. (Original) The process of Claim 1, further comprising a second composite web that contains a second low binder fiber mat, which has the foamable mixture dispersed therein, disposed on a second support mat that is permeable by the foamable mixture, the second composite web oriented either (a) with the second support mat proximate to and above the low binder fiber mat of the first composite web or (b) with the second low binder fiber mat adjacent to the low binder fiber mat of the first composite web.

10. (Original) The process of Claim 9, wherein the fiber reinforced polymeric foam composite has a thickness of greater than two inches (5.08 centimeters).

11. (Previously Amended) The process of Claim 1, comprising the steps:

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- a) conveying from a roll a length of a first composite web containing an low binder fiber mat disposed onto a support mat;
- b) dispensing a foamable mixture onto the low binder fiber mat of the composite web;
- c) conveying a length of top facing sheet such that the low binder fiber mat and foamable mixture are between the support mat and top facing sheet;
- d) constricting the support mat and top facing sheet through a metering gap, achieving penetration of the foamable mixture into the low binder fiber mat; and
- e) expanding the foamable mixture into a polymeric foam.

12. (Original) The process of Claim 11, further comprising conveying a second composite web containing a low binder fiber mat and a support mat onto the foamable mixture prior to step (c) such that the support mat of the second composite web is adjacent to the foamable mixture; wherein the second composite is between the top facing sheet and low binder fiber mat of the first composite web after step (d).

13. (Original)The process of Claim 11, further comprising prior to step (a), conveying a length of

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bottom facing sheet onto which the support mat of the first composite mat is conveyed in step (a); wherein step (d) further comprises constricting the top and bottom facing sheet through the metering gap and either the support mat is penetrable by the foamable mixture or becomes adhesively affixed to the bottom facing sheet.

14. (Previously Amended) A process for fabricating a fiber reinforced polymeric foam composite comprising the steps:

- a) conveying a length of bottom facing sheet;
- b) conveying above the bottom facing sheet a first expandable fiber mat;
- c) conveying above the expandable fiber mat a composite web from a roll; the composite web comprising a low binder fiber mat and a support mat and oriented such that the support mat is below the low binder fiber mat;
- d) conveying a length of top facing sheet above the composite web;
- e) dispensing a foamable mixture between at least one of:

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- (i) the bottom facing sheet and first expandable mat, if dispensing occurs prior to step (b);
  - (ii) the first expandable fiber mat and support mat of the composite web, if dispensing occurs after step (b) and prior to step (c); and
  - (iii) the composite web's low binder fiber mat and top sheet, if dispensing occurs after step (c);
- f) constricting the bottom and top facing sheet through a metering gap, achieving penetration of the foamable mixture into the expandable fiber mat and low binder fiber mat; and
- g) expanding the foamable mixture into a polymeric foam.

15. (Original) The process of Claim 14, wherein the first expandable fiber mat is part of a second composite web.

16. (Original) The process of Claim 14, wherein the bottom facing sheet is part of a second composite web that contains the first expandable fiber mat and wherein steps (a) and (b) are accomplished simultaneously by

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conveying the composite web containing the bottom facing sheet and first expandable fiber mat.

17. (Cancelled)

18. (Cancelled)

19. (Cancelled)

20. (Previously Presented) The process of Claim 1, wherein the low binder fiber mat does not contact any rollers.

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EVIDENCE APPENDIX

None.

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RELATED PROCEEDINGS APPENDIX

None.

## Facsimile Transmittal Sheet

Date	March 7, 2006	Time	4:30 p.m.	Pages Including This Title Page	24
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Phone	(571) 272-1224	Sender's Phone	(989) 636-8434		
Appln. Serial No.	10/615,746	Dow Docket No.	62146A		
<b>Subject:</b> USE OF A LOW BINDER FIBER MAT WITH A SUPPORT MAT FOR FABRICATING A FIBER REINFORCED POLYMERIC FOAM COMPOSITE					
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**Comments:**

As requested attached is the corrected Brief For Appellant.

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